4.3.4.2 Ceramic Immobilization Alternative

The environmental impacts described in the following sections are based on the analysis of the ceramic immobilization facility described in Section 2.4.4.2. The highly radioactive isotope Cs-137, would be included into the ceramic matrix to serve as a radiation barrier to theft and diversion. The representative sites used for this facility are: Hanford, NTS, INEL, Pantex, ORR, and SRS.

In accordance with the Preferred Alternative for surplus Pu disposition, the ceramic immobilization facility could be located at either Hanford or SRS. Further tiered NEPA review will be conducted to examine alternative locations including new and existing facilities at these two sites, should the Preferred Alternative be selected at the ROD.

For the ceramic immobilization, the analysis in Section 4.3.4.2.1 to 4.3.4.2.10 assumes that a new facility would be built. However, there are several potential variations described in Table 2.4–1, some of which could potentially use existing facilities for portions of the operations. For example, under the can-in-canister approach, the existing DWPF at SRS could be used to provide vitrified glass for the outer canister which surrounds the inner can of immobilized Pu.

4.3.4.2.1 *Land Resources*

A new ceramic immobilization facility would disturb 20 ha (49 acres) of land during construction of which 12 ha (30 acres) is used during operations. The need for buffer zones would be determined during site-specific, tiered NEPA documentation. This section describes the impacts to land resources from construction and operation of the facility for each representative site. Land use would be less if existing facilities were used for portions of the ceramic immobilization operation.

Construction and operation of the ceramic immobilization facility would not cause indirect land-use impacts at the analysis sites. As discussed in Section 4.3.4.2.8, in-migration of workers would be required during construction at INEL and Pantex and at all sites analyzed during operations. It is expected that historic housing construction rates would be sufficient to accommodate the in-migrating population at each site. Therefore, offsite land use at the analysis sites would not be affected.

Hanford Site

Land Use. The potential site for a new ceramic immobilization facility would utilize vacant land in the 200 Area adjacent to 200 East. Construction and operation of the ceramic immobilization alternative would be in conformance with existing and future land use as described in the current *Hanford Site Development Plan* and with ongoing discussions in the comprehensive land use planning process. According to the *Hanford Site Development Plan*, 200 Area land use is identified as waste operations, which includes radioactive material management, processing, and storage (HF DOE 1993c:13,14). [Text deleted.]

Construction and operation would not affect other Hanford or offsite land uses. No prime farmlands exist onsite. Construction and operation would be compatible with State and local (Benton, Franklin, and Grant counties and the city of Richland) land-use plans, policies, and controls since Hanford provides information to these jurisdictions for use in their efforts to comply with the GMA (HF DOE 1993c:17).

Visual Resources. [Text deleted.] Construction and operation would be consistent with the industrialized landscape character of the 200 Area and current VRM Class 5 designation. A potential source of visual impact during operations would be from the stack plumes which could be visible from public viewpoints with high sensitivity levels, including State Highways 24 and 240 and the city of Richland; however, because of the viewing distance and compatibility of the proposal with existing industrial character, visual impacts would not occur.

Nevada Test Site

Land Use. [Text deleted.] Construction and operation of the facility in Area 6 would not be in conformance with the current *Nevada Test Site Development Plan*, which designates the southeast area of NTS as a nonnuclear test area. [Text deleted.] However, Area 6 is a potential site for long-term storage and disposition of weapons-usable fissile materials as part of the NTS defense program material disposition activities considered under the Expanded Use Alternative (part of the Preferred Alternative) of the NTS EIS (NT DOE 1996c:3-8,3-9; NT DOE 1996e:A-18). [Text deleted.]

Construction and operation would not affect other NTS or offsite land uses. No prime farmlands exist onsite. The alternative would not be in conflict with land-use plans, policies, and controls of adjacent jurisdictions since none of these counties or municipalities currently undertakes land-use planning.

Visual Resources. [Text deleted.] Construction and operation of the facility would be compatible with the industrial landscape character of the adjacent DAF and the current VRM Class 5 designation of Area 6. Views of the proposed action would be blocked from sensitive viewpoints accessible to the public by mountainous terrain.

Idaho National Engineering Laboratory

Land Use. The proposed ceramic immobilization facility would be located on undeveloped land in the ICPP security area which is situated within the central core area/Prime Development Land Zone of INEL (IN DOE 1992g:12). Construction and operation of the facility would be consistent with the current *Idaho National Engineering Laboratory Site Development Plan* which designates the future land use of the ICPP as receiving and storing spent nuclear fuels and radioactive wastes (IN DOE 1994d:9-8). [Text deleted.]

Construction would not affect other INEL or offsite land uses. No prime farmlands exist onsite. Construction and operation would not be in conflict with land-use plans, policies, and controls of adjacent counties and the city of Idaho Falls since they do not address the potential site.

Visual Resources. [Text deleted.] Construction and operation would be compatible with the present visual character of INEL, which consists of large industrial facilities and stack plumes. Potential visual impacts could occur during operation from the additional stack plumes; however, the proposal would be consistent with the existing Class 5 industrial character of the ICPP.

Pantex Plant

Land Use. A new ceramic immobilization facility would be located on undeveloped land in Zone 4. The potential action would be inconsistent with the current *Pantex Site Development Plan* master plan which designates Zone 4 for weapons and weapon components for staging (PX DOE 1995g:16). However, Pantex could revise the site development plan should Pantex be selected for this alternative.

Construction would not affect other Pantex or offsite land uses. There would be no impacts to prime farmland. The alternative would not be in conflict with the city of Amarillo's land-use plans, policies, and controls since they do not address Pantex.

Visual Resources. [Text deleted.] Potential visual impacts could occur during operation from the additional stack plumes; however, the visual environment would be consistent with the existing industrialized landscape character, and VRM Class 5 designation of Zone 4.

Oak Ridge Reservation

Land Use. A new ceramic immobilization facility would be located on undeveloped land at the northwest quadrant of the Route 95/Bear Creek Road intersection. The alternative would be in conformance with future land-use plan of the current *Oak Ridge Reservation Site Development and Facilities Utilization Plan,* which designates a portion of the site as a major waste management area (OR DOE 1991f:1-7). [Text deleted.]

Construction and operation would be compatible with ORR and offsite land uses. No prime farmlands exist onsite. A new ceramic immobilization facility would not be in conflict with city of Oak Ridge land-use plans, policies, and controls since the current *Oak Ridge Area Land Use Plan* designates the potential site for Industrial and Public land use.

Visual Resources. [Text deleted.] Construction and operation of the facility would change the current VRM Class 4 designation of the Bear Creek Road/Route 95 site to Class 5. Additionally, potential visual impacts could occur during operations from the new stack plumes. Construction and operation activities would be highly visible from Bear Creek Road and Route 95, public roadways with high sensitivity levels.

Savannah River Site

Land Use. A new ceramic immobilization facility would be located on undeveloped land in the F-Area. Facility construction and operation would conform with existing and future land use as designated by the *Savannah River Site Development Plan.* According to the plan, current F-Area land use is designated Industrial Operations, while the future land-use category is primary industrial mission. Specifically, the F-Area is one of four SRS waste management facilities (SR DOE 1994d:2,11,12). [Text deleted.]

Construction and operation would not affect other SRS or offsite land uses. There is no prime farmland on SRS. Construction would not be in conflict with local land use plans, policies, and controls of adjacent counties and cities since they do not address SRS.

Visual Resources. [Text deleted.] Construction would occur within an area of similar industrial landscape character. Potential visual impacts could occur during operation from additional stack plumes; however, the proposal would be consistent with the VRM Class 5 designation of the F-Area.

[Text deleted.]